



Department of Commerce

## Safety & Buildings Division

201 West Washington Avenue

P.O. Box 2658

Madison, WI 53701-2658

Evaluation # 200116-O

# Wisconsin Building Products Evaluation

Material

Low Profile Access Floor  
"NEXUS"

Manufacturer

SMED International  
10 SMED LANE S.E.  
Calgary, Alberta, Canada T2C 4T5

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### SCOPE OF EVALUATION

The low profile access floor system NEXUS, manufactured by SMED International, has been evaluated for use as computer cabling access flooring. The low profile access floor system NEXUS (6-inches or less in height), was evaluated in accordance with the Voluntary Approval requirements of **s. Comm 50.19(1)**, (code sections listed below), of the current Wisconsin Administrative Building And Heating, Ventilating And Air Conditioning Code.

The low profile access floor system (6-inches or less in height), NEXUS meets the definition of an interior finish in accordance with **s. Comm 51.01(75a)(a)**. The low profile access floor system NEXUS has been evaluated for use as an interior finish in accordance with **s. Comm 51.07(1)(2)(a), (4), (5), and (6)**.

The low profile access floor system NEXUS has been evaluated for use in accordance with **s. Comm 51.03** for construction standard **Types 1 through 8** if, \*fire blocked in accordance with the requirements of **s. Comm 51.02(24)**.

The low profile access floor system NEXUS has been evaluated for the minimum requirements of **s. Comm 53.10** for dead loads, **s. Comm 53.11** and **Table 53-I** for live loads.

## DESCRIPTION AND USE

The system provides access for computer/electrical accessories. The low profile access floor system NEXUS is a raised floor system, consisting of steel encased fiberboard panels supported on a steel pedestal base. The pedestals have a polypropylene pad and steel corner clamp for attachment to the floor panels. Polypropylene webbing is used to allow for proper placement of the pedestals. Steel perimeter blocking is used as \*fire-blocking (see LIMITATIONS OF APPROVAL section), to attach the floor system to the perimeter of the space. Metal leveling shims are used for leveling where necessary. Total height of the NEXUS low profile access floor system is 2-1/2 inches. See **Figure 1**.

Electrical and communications utility services are intended to be installed in the void spaces below the panels and between the support cylinders of the modular base system, and to serve associate equipment placed on the surface of the raised flooring system.

The system is intended for use on concrete or masonry floors that are required to be either combustible or non-combustible construction.

**Access Panels:** The panels measure 23.625 inches square by 0.75 inch thick. The composite panel, consist of 11/16-inch thick, medium density fiberboard core bonded to two formed steel pans with a polyurethane adhesive. The pans are 30 gauge, 0.016-inch, commercial steel Type B, hot dipped galvanized.

**Accessories:** Accessories include a metal screw clamp designed to secure the corners of four adjacent floor panels to the support pedestals below. The corner clamp consists of a 1/4-inch diameter by 1-7/8 long flat head screw and one 1-1/2-inch diameter by 0.1-inch thick, countersunk steel washer with, minimum yield strength of 31.9 ksi.

The spacing web is an injection molded polypropylene component, 23.625 inches square by 0.1 inch thick. The spacing web is an interlocking grid system used to locate the support pedestals. A synthetic rubber base adhesive is installed through two holes in the spacing web on either side of the support pedestals at panel intersections to adhere the spacing web to the supporting construction.

Support pedestals transfer loads from the floor panels to the supporting construction. The pedestals have nominal dimensions of 1-3/4-inch high and 2-inches in diameter, manufactured from 22 gauge, 0.03-inch, commercial steel Type B, hot dipped galvanized steel, spaced 7-7/8-inches on center. A polypropylene pad/screw boss is installed on top of the pedestal to accept the corner clamp screw, which connects the floor panel to the pedestal. Steel shims, 0.060-inch thick 2-1/4-inch in diameter, are placed on top of the pad/screw boss when minor leveling adjustments are required.

**Figure 1.**

## TESTS AND RESULTS

**Structural Loading:** The allowable stress level uniform load of the system is 100 psf uniform live load, the allowable stress level concentrated load is 2,000 pounds and a lateral pressure of 70 psf. Loads are based upon testing on a concrete substrate and include a safety factor of 2.5.

SGS U.S. Testing Company Inc., Report No. 135072-1, dated February 3, 2000, containing concentrated load testing.

Calculations dated August 17, 1999, signed and sealed by Stephen H. Hagen, P. E., to determine the applicable gravity and lateral load requirements.

Allowable loads on the NEXUS system installed on substrates other than concrete are beyond the scope of this evaluation. Signed and calculations are on file with the department.

**Access Panels:** The 30 gauge, 0.016-inch, commercial steel Type B, hot dipped galvanized steel panel cover complies with ASTM A653, has a minimum yield strength of 30 ksi. The support pedestals are also ASTM A653, minimum yield strength of 30 ksi.

Omega Point Laboratories Project Nos. 15486-106694 and 15486-106694, dated May 1, 2000, containing testing in accordance with ASTM E1354 to determine time to ignition, burn time, peak heat release and total heat released of wood sleepers and the polypropylene webbing components.

SGS U.S. Testing Company Inc., Report No. 128680-1, dated August 30, 1999, containing results of physical testing of the panels in accordance with ASTM E84. The results indicate a Flame Spread rating of 0 and a Smoke-Developed Index of 5, indicating a Class I or, Class A interior finish classification.

SGS U.S. Testing Company Inc., Report No. 128680-2, dated August 30, 1999, containing results of physical testing of the panels in accordance with ASTM E648. The results indicate a critical radiant heat flux of greater than 1.06 watts/cm<sup>2</sup>, indicating a Class I interior finish classification.

SGS U.S. Testing Company Inc., Report No. 109299-1, dated June 10, 1998, containing results of physical testing of the modular base system polypropylene components in, accordance with ASTM D1929. The test results indicate a self- ignition of 650 degrees Fahrenheit (343 degrees Celsius).

SGS U.S. Testing Company Inc., Report No. 109299-2, dated June 10, 1998, containing results of physical testing of the modular base system polypropylene components in, accordance with ASTM D635. The test results indicate a C2 or CC2 classification.

SGS U.S. Testing Company Inc., Report No. 109299-3, dated June 10, 1998, containing results of physical testing of the modular base system polypropylene components in, accordance with ASTM D2843. The test results indicate a smoke density rating less than 75 percent.

#### LIMITATIONS OF APPROVAL

NEXUS shall be installed in accordance with this evaluation and the manufacturer's installation instructions. Where the manufacturer's installation instructions differ from this evaluation, this evaluation shall be null and void.

The low profile access floor system (6-inches or less in height), NEXUS has not been evaluated for ramp use. All ramp installation when require shall be in accordance with **s. Comm 51.16**. The ramp slope shall be in compliance with **s. Comm 69.26(1)(b)** and **ADAAG 4.8**.

Where the low profile access floor system (6-inches or less in height), NEXUS is part of a required means of egress, space limitations that prohibit the use of a 1:12 slope or less shall comply with **ADAAG 4.1.6(3)(a)** as stated in **Chapter 69** and **ADAAG 4.8.2**.

Where the low profile access floor system (6-inches or less in height), NEXUS is not part of a required means of egress slopes of ramps shall not exceed 1 foot of rise in 6 feet of run in accordance with **s. Comm 51.16(4)(f)**.

Handrails are not required on ramps with slopes of less than 1:20 in accordance with **s. Comm 51.161(1)(g)**.

Ramps constructed of fire-retardant-treated wood shall meet the fire-retardant-treated wood definition of **s. Comm 51.01(52)**.

Non-load bearing partitions located directly over the NEXUS are permitted when installed per the manufacturer's installation instructions.

\*The low profile access floor system NEXUS is allowed for installation in construction standard **Types 1** through **8** if, fire blocked in accordance with the requirements of **s. Comm 51.02(24)**.

The low profile access floor system NEXUS, shall not extend below a fire-resistive rated assembly, fire partition or, fire wall.

The sub-floor space created by the floor plate and pedestal shall not be used as an air plenum.

The use of the low profile access floor system NEXUS for exterior applications is beyond the scope of this evaluation.

As required per **s. Comm 50.12(3)** plan sets submitted for review shall include:

1. Design floor live loads to be applied to NEXUS;
2. Location of non-load bearing partitions and fixed service equipment;
3. Details and notes describing the installation and construction of the NEXUS system consistent with this evaluation;
4. And where provided, details and notes describing the surface treatment, edge protection, capacity and minimum dimensions of ramp components of the NEXUS system consistent with this evaluation.

This evaluation does not address any computer/electrical accessories. The equipment shall be installed in accordance with National Electrical Code as adopted in **Chapter Comm 16**.

This approval will be valid through December 31, 2006, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: July 9, 2001

By: \_\_\_\_\_  
Lee E. Finley, Jr.  
Product & Material Review  
Integrated Services Bureau

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